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ABSTRACT

The intent of the Urban Environmental Studies Curriculum Project, funded by an ESEA Title III grant, was to develop and implement curriculum for an urban oriented environmental studies Program within Special School District 1, Minneapolis Public Schools which would utilize the environment, involve students in investigations and experiences to build an understanding and appreciation of their city and natural environments, and develop a basis for objective clarification of values in areas crucial to the environment. This report lists project identification, project objectives, activities which were used to implement each objective, and evaluation procedures used to determine the extent to which each objective was accomplished. Evaluation results are also presented. Evaluation indicated that project staff has made the first step in reaching its goal by accomplishing the project's first year objectives. Therefore continued funding for the second year is recommended. (RC)

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FINAL EVALUATION REPORT

"Urban Environment Studies Curriculum Project" Special School District #1 Title III ESEA

U.S. DEPARTMENT OF HEALTH,
EDUCATION & WELFARE
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I. INTRODUCTION

Environmental education projects have generally dealt with the ecology of natural communities, their structure, the interactions and interdependencies between their components, the changes occurring within them, and how man affects them. These studies usually deal with natural situations that are "out there somewhere", away from the human habitat of the city. Most materials for urban environmental studies have also mainly emphasized nature study in the city. This emphasis has been largely due to the fact that environmental education has evolved from conservation education and the people developing the programs have been naturalists or life scientists.

The need exists for an environmental education program within the Minneapolis Public Schools which will prepare urban children for the future. A comprehensive program stressing exploration of the urban environment where the students live is needed. No program exists on a citywide basis.

Isolated activities are occurring in schools or individual classrooms, including trips to nature centers, school site development, other field trips to local parks, etc. Some teachers are also aware of activities produced by the state and other agencies. These activities, however, generally stress the study of natural areas -- not the environment of the urban child, and the number of students involved in them is extremely small in comparison to the total school population in this city.

In order to meet this need, Special School District #1, Minneapolis Public Schools, received a Title III ESEA grant to operate the "Urban Environmental Studies Curriculum Project".

The primary focus of this project is the urban environment -- the present and future environment of most of the people in this country. An understanding of the ecology of the city; its structure, the interactions and interdependencies between

its components, the changes occurring within it, and how man as an integral part affects and is effected by it, is a vital basis for preparing students for survival in their environment.

This project is not in opposition to the studies in natural communities. It will actually strengthen the impact of those studies as most environmental problems (including those of natural environments) start and are most acute where people are. Students need to start exploring the environment where they are, then expand outward.

The "Urban Environmental Studies" Project's goal is to develop the curriculum materials for and to implement an urban oriented environmental studies program within the Minneapolis Public Schools which will: utilize the real world (environment) in many subject areas; involve urban students in investigations and experiences which will build an understanding and appreciation of their city and natural environments; and develop a basis for objective value clarification in areas crucial to the environment.

Curriculum materials are to be compiled and developed which utilize the urban environment and Environmental Education Outdoor Laboratories as an integral part of mathematics, social studies, science, language arts, music, drama, and art activities. The curriculum will integrate the application of ideas in present subject area curricula, curriculum materials recommended by the S.E.A. Environmental Studies Program, and other commercially produced units.

Many short activities (approximately 50) based on a general theme, will be included in a unit; the activities suggested on separate cards allowing options for teachers and students. The activities and cards comprising thematic units for grades K-6 will be organized into three groups as follows:

Inquiry activities -- These stress mathematics, science, and social studies; building a base of understanding through exploration and investigation. These activities enable students to recognize alternatives and to consider the consequences of different choices.

Celebration activities -- These activities utilize language arts, art, music, play, drama, and other areas "celebrating" the areas of inquiry. This is an essential stage in the prizing process of value formation.

Action activities -- These initiate direct action and value clarification techniques on the social and scientific aspects of the theme. They are usually based on the discoveries made during the inquiry activities.

Activities will expose students to situations and experiences which will give them a basis for value formation without attempting to force specific values onto them. It is mainly the organization of the units which emphasizes value clarification, applying the valueing pattern proposed by Rath, Harmin, and Simon in Values and Teaching.

The activity cards within a theme are to be written to the student, suggesting the activity and with a few basic directions on how to do it. Materials needed for the activity are to be listed on the back of the card. Some cards suggest activities which relate to the theme yet are part of other units (science, social studies, etc.) which are available to the class. This should aid in the integration of the curriculum. The cards can be used by individual students, groups of students, or as an entire class activity directed by the teacher. This makes them easily adaptable to the alternative educational programs.

A unit can be used throughout a semester or year, providing a process through which a student can assimilate the experiences, mentally integrate them and decide how he/she feels about them. This should be much more effective than isolated activities which may or may not add up to something meaningful for the student.

Teacher, student, and community input will be obtained in the development of the curriculum through the establishment of an advisory group to the project coordinator. This twelve member group are to consider the themes to be developed,

brainstorm for activity ideas, and suggest unique aspects of the community and community resources to be included in the units. This should provide feedback to the groups they represent and to the project coordinator. The coordinator and resource assistant will write the curriculum units but could not do an adequate job without the input of a group of this nature.

The implementation of the program is to include: workshops for the teachers on the use of the materials; individual planning between teachers, the project coordinator and resource assistant; assistance in the classroom by the coordinator and resource assistant; teacher input, evaluation, and suggestions for revision of the activities and units; and the compilation of and distribution system for kits of supplies for each unit.

The Minneapolis Public Schools contracted with Guardian Resource Development, Inc., St. Paul, Minnesota, to perform the project's first year evaluation. Prior to project implementation, at a meeting held in late September, project staff along with the Project Officer from the State Department of Education assigned to the project and the evaluators, refined the project objectives to be accomplished during this first year of project operation. These objectives and the evaluation tasks to be performed were then listed in the "Evaluation Tasks" document dated October 8, 1974, and are the objectives to which this report speaks. After completing the "Evaluation Tasks" document, the evaluators met with project staff and the Project Officer to approve the task statements. This was done in November and December and only minor date revisions were made. These objectives relate to the goal of the project which is:

To develop and implement an urban oriented environmental studies curriculum which will: utilize the real world (environment) in many subject areas; involve urban students in investigations and experiences which will build an understanding and appreciation of their city and natural environments; and develop a basis for objective value clarification in areas crucial to the environment.

Section II of this report lists project identification, project objectives, activities which were used to implement each objective, and evaluation procedures used to determine the extent to which each objective was accomplished. Evaluation results are also presented.

Section III of this report lists conclusions and recommendations as a result of the evaluation.

II. PROJECT OBJECTIVES, ACTIVITIES AND EVALUATION

Project Identification

The Urban Environmental Studies Curriculum Project is currently housed in Sheridan Elementary and Junior High School located in northeast Minneapolis.

Project staff include a full-time project coordinator, assisted by a full-time resource assistant. The target population for this project includes all elementary students in the Minneapolis Public and Private school systems. This year, project participants number approximately 300 students in public and private elementary schools.

Objectives, Activities and Results

The following project objectives were established in the initial stages of implementing the Urban Environmental Studies Curriculum Project. For each objective, the activity carried out to implement the objective will be discussed, along with the procedures that were followed to determine the extent to which the objective was accomplished. Results of the evaluation are also included.

Objective #1

Students will recognize and express four of their values relative to the theme of the unit in which they have participated.

Activities - During this first year, project staff were primarily involved in developing Urban Environmental Studies Units for primary and intermediate grades. The activities in each unit will expose students to situations and experiences which will give them a basis for value formation without attempting to force specific values on them. The organization of the units emphasizes values clarification, applying Simon's values clarification techniques and Kohlberg's moral dilemmas. (See Introduction for more detail on curriculum activities.) Two themes have been completed. Their themes are Air and Circles

and Lines. The project also has written the first draft of a third. The project staff has been delayed in unit development because they originally did not plan to include a Teacher's Guide with the unit. Staff decided it was more important to delay packet development in order to produce the Teacher's Guides. Each unit was assembled into a kit consisting of the following.

- Teacher's Guide
- Unit Activity Cards which include Inquiring, Celebrating, and Acting Activities
- Activities Sheets
- Consumable Materials and Supplies
- Inventory Control Sheet
- Values Evaluation System (for piloting purposes)
- Teacher's Evaluation of Unit

During this first year, it was the task of the evaluators to provide technical assistance to project staff in the designing of a pilot Values Evaluation System which would attempt to measure student's values as they relate to the urban environmental unit theme.

The evaluator was originally to develop a Teacher Checklist based on Simon's "Thirty Clarifying Responses" as a means to gather student's expressions of values. However, project staff believed that Simon's response statements should be included in the Teacher's Guide and not be part of the evaluation system, thus, the Values Evaluation System for each unit included a values clarification strategy relating to the theme of the unit. Students exposed to the unit were asked to make value statements. These value statements would then be validated by involving the students in a moral dilemma exercise that is directly related to the values clarification technique. This dilemma exercise will be used to verify whether the statements made by the students were in fact value statements.

As previously indicated, each unit was to have values clarification and moral dilemma activities. Additionally, each unit piloted this year would also include a Values Evaluation System which would be specifically developed for the Air and Circles and Lines units by project staff and the evaluators. The evaluators and staff would pilot the system utilizing 20% of the students exposed to the units this year.

The following is an explanation of the Values Evaluation System as perceived and developed by project staff and the evaluators.

For each unit, a series of value statements were developed that directly related to the central theme of the unit. Throughout the unit, students were exposed to information relating to those statements and to various values clarification techniques. Toward the end of the unit (last week), the students were asked to rate the statements according to how they felt about the statements. This rating was the values clarification technique used to elicit student's responses on the values statements.

A moral dilemma was then written by staff and evaluators which directly related to the values statements. Prior to being involved in a "buzz" group experience to discuss the moral dilemma, all students were shown a movie on the process of students discussing a moral dilemma in a "buzz" group. Groups of five or six students were then read the moral dilemma and specifically asked what they would do if they were in the situation. The purpose of this moral dilemma group discussion was to help the student determine what the others in the group felt about the particular situation so as to either solidify the student's thinking about the values statements or to change her/his thinking about the values statements. It was hoped that the moral dilemma discussion would allow the student to verbally respond to what he had previously written as values statements.

After the moral dilemma episode, students were again given the same values statements as before and again asked to rate them. A student's expression of a value would be determined

by his/her consistent rating of the value after the dilemma as before the dilemma. In other words, it could be said that a student recognized and expressed a value if the student rated the value statement the same way before and after participation in the moral dilemma.

Results - The Values Evaluation System described above was an outcome of several experiments tried this spring with two classes in the Basilica School. Five values statements relating to air pollution were written for a fifth grade class working with the unit Air. Four values statements relating to standing in line were written for a second grade class participating in the unit Circles and Lines. Moral dilemmas were written that related to each set of values statements.

It was originally intended to compare what students said in the moral dilemmas to how they had rated the values statements. Student group conversation was taped and observed by the project's resource person and two members of the evaluation firm. The project coordinator moderated the "buzz" groups. The three observers took notes on what was said. However, after this was done, it was most difficult to determine any relationship between the ratings and the discussions for each student.

It was at this point in the evaluation that the idea to have the students re-rate the values statements came to the fore. Two problems existed however. (1) The second graders had only to rate the values statements either yes, they agreed with it, or no they did not agree with the statement. The fifth graders had a 15-point rating scale for each statement. In the moral dilemma discussion, the second graders, however, often said they would sometimes do or not do something. Therefore, on the second rating scale the second graders were given the alternative to choose the word sometimes.

(2) In the case of the fifth graders, the moral dilemmas need an additional statement to more clearly connect it to the

five values statements they had rated. However, it was decided to give three fifth graders absent during the first test and moral dilemma discussion a pre-test (rate five values statements), a corrected moral dilemma and then a post-test to compare these results with the results of the original group of fifth graders.

The evaluator determined that the way to analyze the results could be done in several ways. One was to determine the average number of values statements that were rated the same before and after the moral dilemma. However, this did not account for the change in direction that a student might make in rating. For example, if a student rated a statement with a 4 the first time and a 5 the second time, you would not count that as expressing a value. Only the same rating on the pre- and post-tests were counted. However, determining the average number of differences in the ratings for the two tests would take this into account and would also account for subtle changes in student's marking, but not necessarily changes in their thinking or expression of values. The ideal score would be a zero, which would indicate no changes in ratings.

The results for the three groups are as follows.

- (1) Mean number of Values rated same on pre- and post-test by fifth graders. N=24 (This group had the moral dilemma that needed clarification).

$$\bar{X} \text{ number of Values} = 3.1$$

- (2) Mean rating differences between pre- and post-test for fifth graders. N=24

$$\bar{X} \text{ rating difference} = 1.75$$

- (3) Mean number of Values rated same on pre- and post-test by fifth graders. N=3 (These fifth graders had the corrected moral dilemma).

$$\bar{X} \text{ number of Values} = 3.7$$

- (4) Mean rating differences between pre- and post-test for fifth graders. N=3

$$\bar{X} \text{ rating difference} = 1.3$$

- (5) Mean number of Values rated same on pre- and post-test by second graders. N=24

$$\bar{X} \text{ number of Values} = 3.2$$

- (6) Mean rating differences between pre- and post-test for second graders. N=24

$$\bar{X} \text{ rating difference} = .96$$

It should be noted that the second graders had the opportunity to change more of their answers because on the post-test the alternative sometimes was added. However, the results indicate that they had the lowest mean rating difference of all three groups.

The results indicate that the three fifth graders who were evaluated under the ideal system expressed .6 more values than the other fifth graders and expressed .5 more than the second graders. However, it is difficult to draw any conclusions from the data because of the small number of observations (3).

In comparing the second graders with the fifth graders, the results indicate that the second graders have the lowest rating difference (.96) and the highest number of same values expressed on the post-test as on pre-test. (Second graders had 3.2 out of 4 values, while the fifth graders had 3.1 and 3.7 out of 5 values). It is difficult to say why this happened. However, it could be that younger students think only in terms of absolutes, i.e. right or wrong, yes or no, etc., without much variation in their thinking. It could also be that the value statements and moral dilemma, which dealt with doing what the teacher tells you might have a stronger impact on second graders

than did the value statements for the fifth graders. The value statements and the moral dilemmas should be reviewed again before being used.

Strictly speaking, the objective was not met as students did not recognize and express four of their values. However, they might have if they were given a larger number of values to express.

The evaluator suggests that this objective be reworded so as to obtain a better measure of project effectiveness.

Objective #2

The curriculum units developed during the first year of this project will meet the requirements for environmental education curriculum as stated in the State Plan for Environmental Education; and exhibit the characteristics recommended by the Association for Supervision and Curriculum Development (ASCD).

Activities - During the development of the units, project staff utilized the criteria of the State Plan and the ASCD as guidelines. Listed below are the two sets of criteria and the individuals who will review the units to determine whether the unit met the criterion.

STATE ENVIRONMENTAL EDUCATION CRITERIA

- (1) Encourage, promote and/or require instruction by teams of teachers representing various subject areas (teachers using them).
- (2) Emphasize the interdependency of all elements of the environment (Environmental Education specialist).
- (3) Encourage the teaching of skills through which values are formed rather than advocating any particular value or set of values -- that is, students should be taught how to think, not what to think (values person).
- (4) Deal with environmental problems in a rational and objective manner. Teachers and students should examine all sides of an issue (Curriculum Consultant & Resource Teachers/Environmental Education specialist).

- (5) Lead students to consider the importance of human relationships as a vital element in their environment. Values developed in this human environment affect our dealings with one another and the quality of these relationships is reflected in the relationship of people to their physical environment (Social Studies consultant).
- (6) Provide a balance between the necessary knowledge and outside-the-classroom project activities (Curriculum Consultant/teachers using the materials).
- (7) Encourage, promote and/or require instruction in a variety of situations including both in-school and non-school environments (Curriculum Consultants & Resource Teachers).
- (8) Begin with the student's local experiences leading ultimately to an expanded view of the total environment (Teachers/Environmental Education specialist).
- (9) Encourage students to undertake independent study projects (teachers).

ASSOCIATION FOR SUPERVISION AND CURRICULUM DEVELOPMENT CRITERIA

- (1) The environmental education curriculum should be interdisciplinary, incorporating concepts and processes from various disciplines with particular emphasis upon the natural/physical and social sciences (Curriculum Consultants & Resource Teachers).
- (2) Environmental education should be an integral, non-appendage curricular component (teachers).
- (3) The inquiry process should be a prime vehicle for involving pupils in environmental problem solving (Curriculum Consultants & Resource Teachers).
- (4) Appropriate emphasis should be given to studying the total environment: the interrelationships of natural, social and man-made environments (Social Studies Consultant/Environmental Education specialist).
- (5) Appropriate balance in emphasis should be given to the cognitive, affective, and psychomotor domains of educational objectives. If one idea is to be emphasized, it should be the often neglected affective domain (attitudes, feelings, values) (Curriculum Consultants & Resource Teachers).
- (6) Environmental education experiences should be in tune with the developmental stages of the pupil (Curriculum Consultants & Resource Teachers).
- (7) The program should be planned on a school/community basis (GRD/Project staff).

- (8) The utilization of carefully selected teaching aides and materials is essential (GRD/Project staff).

Also during the development of the units, project staff asked the following individuals to review the curriculum units developed to see whether the units meet the criteria.

Nineteen people and one committee, in five categories, were selected to review the units. They are as follows by category.

Environmental Studies Specialists

- Environmental Education Specialist for the Minneapolis Park Department
- Curriculum Committee of the Minnesota Environmental Education Council
- Director of the Minnesota Environmental Sciences Foundation, Inc.

Values Clarification Specialists

- Values Clarification Author and Student of Simon
- Human Relations Facilitator for Minneapolis Public Schools

Social Studies Consultants

- North Area Generalist and Former Minneapolis Elementary Social Studies Consultant
- Minneapolis Public Schools K-12 Social Studies Consultant

Curriculum Consultant and Resource Teachers

- Minneapolis Public Schools Art Consultant
- Resource Teacher, Language Arts
- Resource Teacher, Science
- Resource Teacher, Math
- Resource Teacher, Music
- Resource Teacher, Social Studies

Teachers

- St. Cyril Teacher
- Holy Cross Teacher
- Webster Teacher
- Basilica Teacher (2)
- Hall Teacher
- Holland Teacher
- Bethune Teacher

The evaluators developed a checklist for collecting the written responses of the above individuals. Project staff supplied the individuals with the completed units and the checklist to collect responses to determine whether the units met the State's and ASCD's criteria.

Results - The individuals in each of the five categories were given a specified number of criteria on which to rate the units. The following data lists each category; the number of individuals in each category; the number of criteria the individual is to rate for each unit; the highest score possible that each unit could get in each category (7 X N of criteria) and the actual average score given to the unit by the individuals in each category.

	<u>Circles & Lines</u>	<u>Air</u>
<u>Teachers</u>	N = 6	N = 7
Criteria	4	4
Highest Score	28	28
X Score	26	26
<u>Curriculum Consultants & Resource Teachers</u>	N = 4	N = 4
Criteria	7	7
Highest Score	49	49
X Score	42	41
<u>Social Studies Consultants</u>	N = 2	N = 2
Criteria	2	2
Highest Score	14	14
X Score	13	13
<u>Environmental Educa- tion Specialist</u>	N = 2	N = 2
Criteria	4	4
Highest Score	28	28
X Score	27.5	26.5

	<u>Circles & Lines</u>	<u>Air</u>
<u>Value Clarification Specialist</u>	N = 2	N = 2
Criteria	1	1
Highest Score	7	7
X Score	7	6.5

The data above indicate that the units met the criteria of the State and the ASCD and that the objective was successfully accomplished as planned.

Objective #3

During 1974-75, 100 K-6 teachers (and 1975-77, 144 more K-6 teachers) will each receive four or more hours of intensive in-service experience related to the instructional use of the environmental studies units in their specific teaching situation. The success of these workshops will be determined by a questionnaire completed by the teachers and a high percentage of use (at least 75%) in their classrooms.

Project staff organized a series of in-service workshops for the teachers who would pilot the units in their schools. Because the public schools and parochial schools operate on different time schedules, two general workshops were held to accommodate the time differences. This general workshop will acquaint the teacher with the philosophy and goals of the project and explain the environmental studies project and why the focus is on urban environment and value development. The training also included the use of values clarification techniques and moral dilemmas in the classroom. Project staff also introduced the materials.

A specific workshop was then held for each unit. Each workshop explained how to use the specific activities in each unit, how to use the Teacher's Guide, and how to use the unit in various educational settings. Project staff also met with each building's advisory staff person to determine how the materials will be introduced into each school.

The evaluator developed two Teacher Workshop Surveys to assess teacher's reaction to the workshop. One was used to evaluate the general workshop and the other to evaluate the specific workshop for each unit.

The evaluator also developed an instrument called Teacher Evaluation of Urban Environmental Studies Units to be completed by all teachers who are piloting the units. This questionnaire would yield valuable information on the extent of student and teacher involvement with the materials. Teacher and student reaction to and acceptance of the units and suggestions for revisions are also gathered by this questionnaire.

Copies of the above instruments are available from the project coordinator.

Results - Seventy-three of the public and parochial teachers who attended the two general workshops filled out the questionnaire. They were asked to rate the four workshop objectives on the following scale (same rating scale for all workshops).

- 1 = The workshop did not meet the objective
- 4 = The workshop met the objective

The percent of responses for each objective are as follows: N = 73

Objective - To emphasize the philosophies behind the units.

- What environmental studies is
- Why we are focusing on the urban environment
- Why we are working toward value development

1	2	3	4	No Response
1%	7%	29%	60%	3%

Objective - To learn to use value clarification techniques in the classroom.

1	2	3	4	No Response
0%	11%	47%	41%	1%

Objective - To learn to use moral dilemmas with students as a method for the verification of value statements.

1	2	3	4	No Response
3%	9%	36%	53%	1%

Objective - Introduce the unit material.

1	2	3	4	No Response
4%	14%	36%	46%	0%

The above data indicate that the majority of teachers felt that the workshop met the objectives.

Eight out of ten people attending returned the questionnaires after the workshop on the unit: Circles and Lines. The data are as follows. N = 8

A. Teach you how to do specific activities in the unit.

1	2	3	4
		38%	62%

B. Teach you how to use the teacher's guides.

1	2	3	4
		38%	62%

C. Teach you how to use the unit in various educational settings.

1	2	3	4
		38%	62%

D. Teach you how to obtain the unit for your classes.

1	2	3	4
	13%		87%

E. Teach you how supplies for the unit will be distributed.

1	2	3	4
	13%		87%

Do you feel that the workshop has adequately prepared you to teach an Environmental Studies unit? (Circle One) YES NO

100%

Do you intend to use the materials in the classroom? (Circle One) YES NO

87% 13%

Of the 28 people who attended the workshop on the Unit: Air 18 returned the questionnaire. The data are listed below.

A. Teach you how to do specific activities in the unit.

1	2	3	4
		6%	94%

B. Teach you how to use the teacher's guide.

1	2	3	4
			100%

C. Teach you how to use the unit in various educational settings.

1	2	3	4
		18%	82%

D. Teach you how to obtain the unit for your classes.

1	2	3	4
		18%	82%

E. Teach you how supplies for the unit will be distributed.

1	2	3	4
		6%	94%

Do you feel that the workshop was adequately prepared you to teach an Environmental Studies unit? (Circle One)

YES NO NO RESPONSE

94% 6%

Do you intend to use the materials in the classroom? (Circle One) YES NO

76% 24% indicated they were aides and the use of the material would be up to the teacher they worked with.

The above data indicate that the great majority of those attending the two workshops felt that the workshops met their respective objectives.

The above data indicate that the workshops accomplished their objectives and that project objective has been satisfied.

Objective #4

Seven teachers with students using the materials and five community members will form a 12 member advisory group to meet a minimum of 16 hours with the project coordinator and resource assistant for input into the development of the curriculum activities and to be involved in their evaluation and revision.

Activities - The 12 member advisory group has been extensively involved in the evaluation and revision of the units. They also assisted in the selection of the seven themes. Teachers on the advisory group have tested the units in their classrooms.

Listed below are the steps taken in the development of each unit by project staff.

- (1) Brainstorming with advisory group on ideas for unit activities.
- (2) Organize ideas into draft of three types of activities (inquiring, celebration and acting).
- (3) Advisory group comments on unit activities.
- (4) Revision draft of unit
- (5) Establish inventory (order supplies)
- (6) Criteria evaluation.
- (7) Final revision.
- (8) Printing of unit cards.
- (9) Unit testing in advisory group classrooms.
- (10) Teacher workshops.
- (11) Pilot unit in classroom.

As can be seen from the above list, the advisory group is instrumental in assisting the staff in the development, revision and evaluation of each unit and has actually used the materials.

This objective has been successfully implemented as planned.

Objective #5

Supplies for the units will be organized into kits and a distribution system established. This should encourage a higher usage of the units by teachers.

Activities - As indicated earlier in the report, each unit is organized into a kit including the following:

- Teacher's Guide
- Unit Activity Cards which include Inquiring, Celebrating, and Acting Activities
- Activities Sheets
- Consumable Materials and Supplies
- Inventory Control Sheet
- Values Evaluation System (for piloting purposes)
- Teacher's Evaluation of Unit

The project staff has developed a distribution system based on the use of the Inventory Control Sheets (ICS) for each unit. Each ICS has a list of the materials supplied in the kit for four possible group structure usages of the kits (Class of 30, Class of 15, Independent Study, Other). The materials that are included in the kit are then cross-referenced within the activity card. Each teacher must check-out and check-in the materials kit for each unit and return or account for unused material. This will encourage greater usage of the units by the teachers.

The evaluator believes that an adequate distribution system has been established. Its workableness will be determined by its use in year two of the project. This objective has been satisfactorily accomplished.

III. CONCLUSIONS AND RECOMMENDATIONS

The evaluation conducted by Guardian Resource Development, Inc. indicates the following conclusions and recommendations.

- (A) Development of a pilot Values Evaluation System to measure expressions of student values - A design utilizing a values clarification rating activity and a moral dilemma "buzz" group was experimented with as a method to quantify expressions of values. The pre-piloting of this approach did not produce adequate data to indicate its continuance or discontinuance as a viable evaluation system.

The evaluator would recommend that a clearer definition of a value is important. Values clarification expertise would be most helpful in the development of the values clarification strategy and moral dilemma to be used for evaluation purposes and in the overall review of the Values Evaluation System as it is presently conceived. Revision of the objective to be measured is suggested as a first step in facilitating the evaluation process to measure objective accomplishment. If one believes that a values clarification technique can produce expressions of values, and that interaction in a moral dilemma group session is also a method of actively expressing one's values, then it would be worthwhile to try the current evaluation system in a more formal research design with experimental and control groups and better developed values statements and moral dilemmas.

- (B) Develop curriculum units to meet State and ASCD Environmental Education criteria - Two urban environmental studies curriculum units entitled Air and Circles & Lines have been developed and implemented by project staff. A third is being reviewed by the advisory group. Staff is in the process of development of additional units, but were delayed because of the need to produce a Teacher's Guide for each of the units. Data collected from those

individuals reviewing the units to determine extent to which the units met State and ASCD criteria conclusively indicates that the units have met the criteria and the materials include creative, engaging activities which provide ample opportunities for students to explore their personal reactions to their environments.

The evaluator would recommend that staff not only continue to develop the urban environmental units, but strongly urge staff to continue to utilize the individuals who have reviewed the units in respect to the prescribed criteria.

- (C) In-Service Workshop for Teachers on use of units - Data received from teachers attending workshops this year indicate success in accomplishment of workshop objectives. It goes without saying that the widespread use of the units rests entirely on the acceptance and willingness of the classroom teacher to implement them in the classroom. If evidence indicates that the units do what they have been developed to do, i.e. prepare students to effectively relate to their environment, then it is crucial that the teacher be properly informed and instructed in how to implement them in the classroom.
- (D) Advisory Group continuance - This group of individuals have been most helpful in the overall process of unit development. It would appear that their valuable input to project staff would be necessary in order to continue the high quality of the units.

The intent of this project in Minneapolis was to develop and implement curriculum for an urban oriented environmental studies program within the district's public schools which would utilize the environment, involve students in investigations and experiences to build an understanding and appreciation of their city and natural environments, and develop a basis for objective clarification of values in areas crucial to the environment.

In conclusion, the evaluator believes that project staff has made the first step in reaching this goal by accomplishing the project's first year objectives. Therefore, Guardian recommends continued funding for the second year.